WHAT IS CLAIMED IS:

1.   A method of preparing differentiated cells
from neural stem cells comprising the steps of:
    (a) isolating neural stem cells from the tissue
5   of a donor,
    (b) proliferating the isolated neural stem cells
in a first culture medium having a first growth factor
to produce precursor cells, and
    (c) differentiating the precursor cells to produce
10   differentiated cells by culturing said precursor cells
in a second culture medium having at least a second
growth factor wherein said second culture medium is
substantially free of said first growth factor.

2.   The method of Claim 1 wherein the first growth
15   factor is epidermal growth factor.

3.   The method of Claim 1 wherein the second
culture medium contains serum.

4.   The method of Claim 1 wherein the second
growth factor is selected from the group consisting of
20   acidic fibroblast growth factor, basic fibroblast growth
factor, ciliary neurotrophic factor, nerve growth
factor, brain-derived neurotrophic factor, neurotrophin
3, neurotrophin 4, interleukins, leukemia inhibitory
factor, cyclic adenosine monophosphate, forskolin,
25   tetanus toxin, high levels of potassium, amphiregulin,
transforming growth factor alpha, transforming growth
factor   betas,   insulin-like   growth   factors,
dexamethasone, isobutyl 3-methylxanthine, somatostatin,
growth hormone, retinoic acid and platelet-derived
30   growth factor.

5.   The method of Claim 1 wherein said differentiated cells are neurons and said second growth factor is a ciliary neurotrophic factor.

6.   The method of Claim 1 wherein said differentiated cells are mature oligodendrocytes and said second growth factor is ciliary neurotrophic factor.

7.   The method of Claim 1 wherein said differentiated cells are astrocytes, said second growth factor is a ciliary neurotrophic factor, and said second culture medium is substantially free of serum.

8.   The method of Claim 1 wherein said differentiated cells are neurons and said second growth factor is a brain-derived neurotrophic factor.

9.   The method of Claim 1 wherein said differentiated cells are neurons and said second growth factor is retinoic acid.

10.   The method of Claim 1 wherein said differentiated cells are neurons and said second growth factor is basic fibroblast growth factor.

11.   A method of preparing precursor cells comprising the steps of:
    (a) isolating neural stem cells from the tissue of a donor,
    (b) maintaining the isolated neural stem cells in a first culture medium containing basic fibroblast growth factor, and
    (c) proliferating the isolated neural stem cells in a second culture medium containing epidermal growth

factor and basic fibroblast growth factor to produce
precursor cells.

12. A method of preparing differentiated cells
from neural stem cells comprising the steps of:
(a) isolating neural stem cells from the tissue
of a donor,
(b) proliferating the isolated neural stem cells
in a first culture medium having a growth factor to
produce precursor cells, and
(c) contacting the precursor cells with a substrate
in a second culture medium substantially free of said
first growth factor.

13. The method of claim 12 wherein the substrate
is selected from the group consisting of poly-L-
ornithine, collagen, fibronectin, laminin, and matrigel.